

REMARKS

In view of the above amendments and the following remarks, favorable reconsideration of the outstanding office action is respectfully requested.

Claims 1-4, 7-10 and 21-23 remain in this application. Claims 5, 6, and 11-20 have been canceled, claims 1, 2, 7 and 8 have been amended, and claims 21-23 have been added in this response. Applicant believes that no new matter is added to the application as part of this response.

1. Amendments

Claim 1 has been rewritten to recite that the organometallic precursor contains aluminum, and that the transparent glass body made in the method contains between 100 ppb and 100 ppm aluminum, and has a transmittance greater than 99.5%/cm at a wavelength of 193 nm. Support for the added limitations are found in the specification at, for example, paragraphs 0017 and 0025. Claim 2 has been rewritten to recite aluminum so that it agrees with claim 1.

Claims 7 and 8 have been rewritten to correct dependency and to improve clarity.

New claims 21 and 22 recite a method of fabricating an apparatus including a silica glass article and a source of ultraviolet light. Support for this claim is found in paragraph 0002, 0017 and 0025 as well as in original claims 1 and 8.

Please charge the fee of \$54 under 37 C.F.R. §1.16(c) for three new claims in excess of twenty to the deposit account of the undersigned, Deposit Account 03-3325.

2. Claim Rejections - 35 U.S.C. §103

The Examiner has rejected claims 1-6, 8-13 and 15-16 under 35 U.S.C. §103(a) as being unpatentable over Tumminelli et al. (U.S. 5,141,549) taken with the Condensed Chemical Dictionary alone or with Schermerhorn (U.S. 5,951,730). The Examiner has also rejected claims 1-6, 8-13 and 15 under 35 U.S.C. §103(a) as being unpatentable over Tumminelli et al. (U.S. 5,141,549) taken with Crossland et al. (U.S. 6,474,106).

A proper *prima facie* showing of obviousness requires the PTO to satisfy three requirements. First, the prior art relied upon, coupled with knowledge generally available to one of ordinary skill in the art, must contain some suggestion which would have motivated the skilled artisan to modify the reference or to combine references. *See In re Fine*, 837 F.2d 1071, 1074, 5 USPQ.2d 1596, 1598 (Fed. Cir. 1988). Second, the PTO must show that, at the time the invention was made, the proposed modification had a

reasonable expectation of success. *See Amgen v. Chugai Pharm. Co.*, 927 F.2d 1200, 1209, 18 USPQ.2d 1016, 1023 (Fed. Cir. 1991). Finally, the combination of references must teach or suggest each and every limitation of the claimed invention. *See In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970). Pursuant to MPEP section 2143, the teaching or suggestion to the claimed combination and the reasonable expectation of success must both be found in the prior art, not in an applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ.2d 1438 (Fed. Cir. 1991).

Claims 11-13 and 15-16 have been canceled, rendering moot the rejections thereof.

Claim 1 has been rewritten to recite that the organometallic precursor contains aluminum. While the AlCl_3 disclosed in Tumminelli is an aluminum-containing precursor, it is not organometallic. There is no organic moiety in AlCl_3 ; it is simply an inorganic metal halide.

Claim 1 also recites that the transparent glass body made in the method contains between 100 ppb and 100 ppm aluminum. The Examiner has taken the position that "[w]ith regard to the claimed amount of metal, Tumminelli et al disclose that Al prevents clustering, is a homogenizing agent and increases the index of refraction. One of ordinary skill in the art would have been able to decide the level of this additive to impart the desired effect in view of the teachings of Tumminelli et al." Applicant asserts that, while Tumminelli et al. discloses no actual amount of aluminum, the skilled artisan would have been motivated to use significantly more than 100 ppm of aluminum in the device of Tumminelli. For example, in U.S. Patent 6,289,698, aluminum is used as a homogenizing agent (i.e., to prevent clustering) for erbium in an amplifying optical fiber. In U.S. 6,289,698, the concentration of Al_2O_3 in the core of the fiber ranges from 0.62 to 2.35 wt%, dropping to 0.21 to 1.28 wt% at the centerline. Even the lowest centerline value of 0.21 wt% Al_2O_3 corresponds to a concentration of aluminum of about 1060 ppm. In concentrations of 100 ppm, the aluminum would not provide significant protection against clustering of the rare earth ions of Tumminelli et al. Similarly, at least a few wt% Al_2O_3 would be needed to increase the index of refraction of a material enough (about 0.5%) to act as a waveguiding core in an analogous non- Al_2O_3 -doped cladding material.

Claim 1 also recites that that the transparent glass body made in the method has an internal transmittance of greater than 99.5%/cm at a wavelength of 193 nm. There is no teaching or suggestion that the material of Tumminelli has such a high transmittance in

the ultraviolet. Since Tumminelli's device operates in the infrared, there would be no reason for the skilled artisan to be concerned with high ultraviolet transparency.

The Examiner used Schemerhorn et al. for the teaching of multiple burners; Schemerhorn et al. does not appear to teach any of the above-described limitations.

The Examiner used Crossland et al. to show a process in which "aluminum precursors can be combined with silica precursors in a deposition and consolidation process where the aluminum precursor in solid form is combined with a carrier gas in a sublimator." Crossland et al. does not appear to teach any of the above-described limitations.

Since the combined references do not describe the formation of a silica glass doped with aluminum in a concentration of 100 ppb – 100 ppm using an organometallic precursor, Applicant submits that the combined references do not form a *prima facie* case of obviousness against claim 1 as rewritten, and requests that the Examiner withdraw the rejections thereof.

Claims 2-4 and 8-10 depend ultimately from claim 1. Applicant therefore submits that the combined references likewise do not form a *prima facie* case of obviousness against claims 2-4 and 8-10, and requests that the Examiner withdraw the rejections thereof.

3. New claims

New claims 21-23 recite methods of making apparati including a fused silica article and a source of high-power ultraviolet light. The aluminum-containing articles of Tumminelli et al. and Crossland et al. are amplifying optical waveguides designed for use with visible and infrared wavelengths.

4. Allowable Subject Matter

Applicant thanks the Examiner for indicating that claims 7 and 14 consists of allowable subject matter. Claim 14 has been canceled. Claim 7 depends ultimately from claim 1, and is therefore now believed to be in allowable form.

5. Conclusion

Based upon the above amendments, remarks, and papers of record, Applicant believes the pending claims 1-4, 7-10 and 21-23 of the above-captioned application are in

allowable form and patentable over the prior art of record. Applicant respectfully requests reconsideration of the pending claims and a prompt Notice of Allowance thereon.

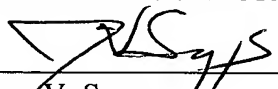
Applicant believes that no extension of time is necessary to make this Response timely. Should Applicant be in error, Applicant respectfully requests that the Office grant such time extension pursuant to 37 C.F.R. §1.136(a) as necessary to make this Reply timely, and hereby authorizes the Office to charge any necessary fee or surcharge with respect to said time extension to the deposit account of the undersigned firm of attorneys, Deposit Account 03-3325.


Please direct any questions or comments to James V. Suggs at 607/974-3606.

Date: 6-18-03

Respectfully submitted,

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